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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,036	11/25/2003	Anthony L. Coyle	TI-36847 (032350.B570)	7802
23494	7590	01/26/2006	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			IM, JUNGHWA M	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/723,036	Applicant(s) COYLE, ANTHONY L.	
	Examiner Junghwa M. Im	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 10, 11 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10, 11 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-6, 10-11 and newly added claims 22-25 for examination in the reply filed on November 8, 2005 is acknowledged.

Drawings

The drawings were received on November 8, 2005. These drawings are acceptable. However, the drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description. The specification of the instant invention describes that Fig. 1 contains lines A-A and B-B that are not shown. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 1 is objected to because of the following informalities. Claim 1 recites a phrase of "a second side of the die pad ... a first surface of the die pad." This should be -- a second side

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of the die pad ... a first side of the die pad -- or -- a second surface of the die pad ... a first surface of the die pad -- . Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites a limitation regarding the location of the leads that are confusing. Note that the first plurality of the leads are the ones with a conductive portion, therefore, leads [32] which are in the center of the package in Fig. 1 or near the end of the package in Fig. 4.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 10-11 and 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Carter, Jr. et al. (US 5594234), hereinafter Carter.

Regarding claim 1, Figure 1 of Carter shows an electronic device comprising a plastic dual-in-line packaging (PDIP) structure, the PDIP structure including:

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a lead frame including a die pad [12] adjacent a conductive portion [14] having at least two bends (Figure 3); a first plurality of leads [11e] extending from the die pad and the conductive portion and the at least two bends; a second plurality of leads [11] separating from the die pad by a gap,

a die [20] disposed on a second side of the die pad; and

a mold structure [21] covering the die and the second side of the die pad; and exposing a first surface of the die pad.

Regarding claim 2, Figure 11 of Carter shows a motherboard [84; printed wiring board], wherein the exposed first surface of the die attach is thermally coupled to the motherboard by a heat conductive via [85].

Regarding claim 3, Figure 11 of Carter shows that the exposed first surface of the die attach is in direct contact with the motherboard.

Regarding claim 4, Figure 1 of Carter shows that the mold structure has a first surface, and the exposed first surface of the die attach pad is substantially flush with the first surface of the mold structure.

Regarding claim 5, Figure 10b of Carter shows a heat sink [72] disposed in thermal communication with the exposed first surface of the die attach pad.

Regarding claim 6, Figure 11 of Carter shows a motherboard [84; printed wiring board] wherein the mold structure has a first side generally facing the motherboard and a second side opposite the first side, and wherein the first surface of the die attach is exposed from the second side of the mold structure.

Regarding claim 10, Figure 1 of Carter shows that the first plurality of leads are located generally near a first end of the PDIP structure and a second end of the PDIP structure, the second end of the PDIP structure located generally opposite the first end of the PDIP structure; and wherein the second plurality of leads are located generally in the middle of the package.

Regarding claim 11, insofar as understood, Figure 1 of Carter shows that the first plurality of leads are located generally near a first end of the PDIP, and the second plurality of inactive leads are located generally near a second end of the PDIP, the second end of the PDIP structure located generally opposite the first end of the PDIP structure.

Regarding claim 22, Figure 1 of Carter shows a dual-in-line package (PDIP), comprising a die [20],

a lead frame including a die pad [12] having a first surface, on which the die is attached; and a plurality of leads;

a conductive portion [14 in Figure 3] extending from the die pad, having at least two bends;

a first plurality of leads [11e] extending from the conductive portion and the at least two bends;

a second plurality of leads [11] separating from the die pad by a gap and electrically coupled to the die; and a mold structure [21] encapsulating the die and the first surface of the die pad.

Regarding claim 23, Figure 3 of Carter shows that the mold structure has a top surface and the bottom surface.

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Regarding claim 24, Figure 3 of Carter shows that the die pad has a second surface uncovered by the mold structure and is substantially flush with the bottom surface of the mold structure.

Regarding claim 25, Figure 10b of Carter shows a heat sink [72] thermally coupled to the second surface of the die pad.

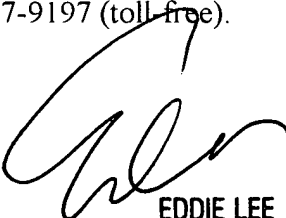
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junghwa M. Im whose telephone number is (571) 272-1655. The examiner can normally be reached on MON.-FRI. 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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